

APPENDIX G

PROJECT DESIGN

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Modified Alignment 3-C-10 Construction Cost Breakdowns

Borrow Allowable to -54 ft MLLW

<i>Construction Element</i>	<i>Unit Cost</i>	<i>Units</i>	<i>Quantity</i>	<i>Cost</i>
<u>DMCF Predredging</u>				
Mobilization/Demobilization	1,500,000 \$/Job		1	\$1,500,000
Mechanical Unsuitable Excavation/Placement @ HMI				
(2) Clamshell Dredges	6.72 \$/cy		1,730,000	\$11,625,600
Total				\$11,625,600
Supervision & Engineering	5,000 \$/d		43	\$212,500
Contingency Cost	20%			\$2,667,620
TOTAL Predredging Cost				\$16,005,720
<u>DMCF Initial Retention Structure Construction</u>				
Mobilization/Demobilization	2,000,000 \$/Job		1	\$2,000,000
Dike Construction/Fill (includes 25% construction loss)				
Hydraulic Sand Placement	4.00 \$/cy		1,500,000	\$6,000,000
Mechanical Clay Placement	8.08 \$/cy		0	\$0
Seagirt Borrow Material (above 52')	0.00		401,000	\$0
Seagirt Borrow Material (below 52')	13.54 \$/cy		68,000	\$920,720
Shoreline Dike	20.77 \$/cy		0	\$0
Dike Shaping	111.00 \$/lf		5,000	\$555,000
Supervision & Engineering	5,000 \$/d		61	\$303,500
Total			1,969,000	\$7,779,220
Stone Work				
Armored Sand Dike (Slope Armor)	39.00 \$/ton		48,000	\$1,872,000
Wet Basin Stone Dike Fill				
Wet Basin 500 lb. Armor Stone				
Road Stone	11.00 \$/sy		21,934	\$241,274
Spillways	200,000 \$/per		2	\$400,000
Geotextile				
Section 2 - Armored Sand Dike	4.00 \$/sy		41,028	\$164,112
Roadway	4.00 \$/sy		26,587	\$106,348
Total				\$270,460
Contingency Cost	20%			\$2,512,591
Initial Dike Construction Cost				\$15,075,545
Cofferdam Construction				
Cofferdam Section	14,700,000 \$/Job		1	\$14,700,000
Total Initial Construction Cost				\$29,775,545
<u>Wet Basin Construction</u>				
Storm Drain Relocation (+30% Contingency) (2005 Cost)	3,500,000 \$/Job		1	\$3,500,000
Dike Construction and Fill (+30% Contingency) (2005 Cost)	3,800,000 \$/Job		1	\$3,800,000
Escalation of Costs to 2006 Dollars	2.0%			\$146,000
Wet Basin Construction Cost				\$7,446,000
<u>Total Predredging and Construction Cost</u>				<u>\$53,227,265</u>

Modified Alignment 3-C-10 Total Site Costs

Borrow Allowable to -54 ft MLLW

Site Characteristics		
Item	Value	Units
Site Capacity	15.4	mcy
Site Effective Acreage	101	acres
Annual Placement	0.8	mcy
Site Life	19.0	years
Perimeter Dike	12,750	lf

Total Site Costs						
Item	Unit	Unit Rate	Quantity	Item Cost	Comments	
A. Initial Construction Costs				\$58,027,265		
Initial Construction Costs				\$53,227,265	Includes 20% Contingency	
Study/Design Costs				\$4,000,000	Feasibility and PED	
Study/Design Contingency		20%		\$800,000		
B. Site Development Costs				\$38,760,000		
Dredged Material Management	year	\$700,000	19.0	\$13,300,000	Based on Cox Creek Costs	
Site Maintenance	year	\$500,000	19.0	\$9,500,000	Based on Cox Creek Costs	
Site Monitoring and Reporting	year	\$500,000	19.0	\$9,500,000	Based on Cox Creek Costs	
Contingency		20%		\$6,460,000		
C. Mitigation/Infrastructure Costs				\$48,716,000	From Study Team	
D. Dike Raising				\$19,792,785		
Common Borrow	\$/cy	\$15.00	752,000	\$11,280,000		
Dried Dredged Material	\$/cy	\$9.00	587,000	\$5,283,000		
Contingency		20%		\$3,229,785		
E. Dredging, Transportation, & Placement Costs				\$123,200,000		
Dredging	mcy	\$4.00	15.4	\$61,600,000	Clamshell Dredging	
Transportation	mcy	\$1.00	15.4	\$15,400,000	\$0.10 / NM Haul Distance	
Placement	mcy	\$3.00	15.4	\$46,200,000	Hydraulic Unloader	
Total Cost A+B+C+D+E				\$288,496,050		
Total Unit Cost				\$18.73 per cy		
Total Unit Cost Rounded				\$19.00 per cy		

Modified Alignment 3-C-10 Construction Cost Breakdowns

Borrow Allowable to -53 ft MLLW

<i>Construction Element</i>	<i>Unit Cost</i>	<i>Units</i>	<i>Quantity</i>	<i>Cost</i>
<u>DMCF Predredging</u>				
Mobilization/Demobilization	1,500,000 \$/Job		1	\$1,500,000
Mechanical Unsuitable Excavation/Placement @ HMI				
(2) Clamshell Dredges	6.72 \$/cy		1,730,000	\$11,625,600
Total				\$11,625,600
Supervision & Engineering	5,000 \$/d		43	\$212,500
Contingency Cost	20%			\$2,667,620
TOTAL Predredging Cost				\$16,005,720
<u>DMCF Initial Retention Structure Construction</u>				
Mobilization/Demobilization	2,000,000 \$/Job		1	\$2,000,000
Dike Construction/Fill (includes 25% construction loss)				
Hydraulic Sand Placement	4.00 \$/cy		1,500,000	\$6,000,000
Mechanical Clay Placement	8.08 \$/cy		0	\$0
Seagirt Borrow Material (above 52')	0.00		401,000	\$0
Seagirt Borrow Material (below 52')	13.54 \$/cy		0	\$0
Offsite Upland Borrow	20.77 \$/cy		38,686	\$803,508
Shoreline Dike	20.77 \$/cy		29,314	\$608,852
Dike Shaping	111.00 \$/lf		5,000	\$555,000
Supervision & Engineering	5,000 \$/d		61	\$303,500
Total			1,969,000	\$8,270,860
Stone Work				
Armored Sand Dike (Slope Armor)	39.00 \$/ton		48,000	\$1,872,000
Wet Basin Stone Dike Fill				
Wet Basin 500 lb. Armor Stone				
Road Stone	11.00 \$/sy		21,934	\$241,274
Spillways	200,000 \$/per		2	\$400,000
Geotextile				
Section 2 - Armored Sand Dike	4.00 \$/sy		41,028	\$164,112
Roadway	4.00 \$/sy		26,587	\$106,348
Total				\$270,460
Contingency Cost	20%			\$2,610,919
Initial Dike Construction Cost				\$15,665,513
Cofferdam Construction				
Cofferdam Section	14,700,000 \$/Job		1	\$14,700,000
Total Initial Construction Cost				\$30,365,513
<u>Wet Basin Construction</u>				
Storm Drain Relocation (+30% Contingency) (2005 Cost)	3,500,000 \$/Job		1	\$3,500,000
Dike Construction and Fill (+30% Contingency) (2005 Cost)	3,800,000 \$/Job		1	\$3,800,000
Escalation of Costs to 2006 Dollars	2.0%			\$146,000
Wet Basin Construction Cost				\$7,446,000
<u>Total Predredging and Construction Cost</u>				<u>\$53,817,233</u>

Modified Alignment 3-C-10 Total Site Costs

Borrow Allowable to -53 ft MLLW

Site Characteristics		
Item	Value	Units
Site Capacity	15.4	mcy
Site Effective Acreage	101	acres
Annual Placement	0.8	mcy
Site Life	19.0	years
Perimeter Dike	12,750	lf

Total Site Costs						
Item	Unit	Unit Rate	Quantity	Item Cost	Comments	
A. Initial Construction Costs				\$58,617,233		
Initial Construction Costs				\$53,817,233	Includes 20% Contingency	
Study/Design Costs				\$4,000,000	Feasibility and PED	
Study/Design Contingency		20%		\$800,000		
B. Site Development Costs				\$38,760,000		
Dredged Material Management	year	\$700,000	19.0	\$13,300,000	Based on Cox Creek Costs	
Site Maintenance	year	\$500,000	19.0	\$9,500,000	Based on Cox Creek Costs	
Site Monitoring and Reporting	year	\$500,000	19.0	\$9,500,000	Based on Cox Creek Costs	
Contingency		20%		\$6,460,000		
C. Mitigation/Infrastructure Costs				\$48,716,000	From Study Team	
D. Dike Raising				\$19,792,785		
Common Borrow	\$/cy	\$15.00	752,000	\$11,280,000		
Dried Dredged Material	\$/cy	\$9.00	587,000	\$5,283,000		
Contingency		20%		\$3,229,785		
E. Dredging, Transportation, & Placement Costs				\$123,200,000		
Dredging	mcy	\$4.00	15.4	\$61,600,000	Clamshell Dredging	
Transportation	mcy	\$1.00	15.4	\$15,400,000	\$0.10 / NM Haul Distance	
Placement	mcy	\$3.00	15.4	\$46,200,000	Hydraulic Unloader	
Total Cost A+B+C+D+E				\$289,086,018		
Total Unit Cost				\$18.77 per cy		
Total Unit Cost Rounded				\$19.00 per cy		